2005 Groundwater Monitoring Program

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Kleinfelder
Program and Project Manager

Deseret Chemical Depot
Restoration Advisory Board Meeting
November 15, 2005

Overview

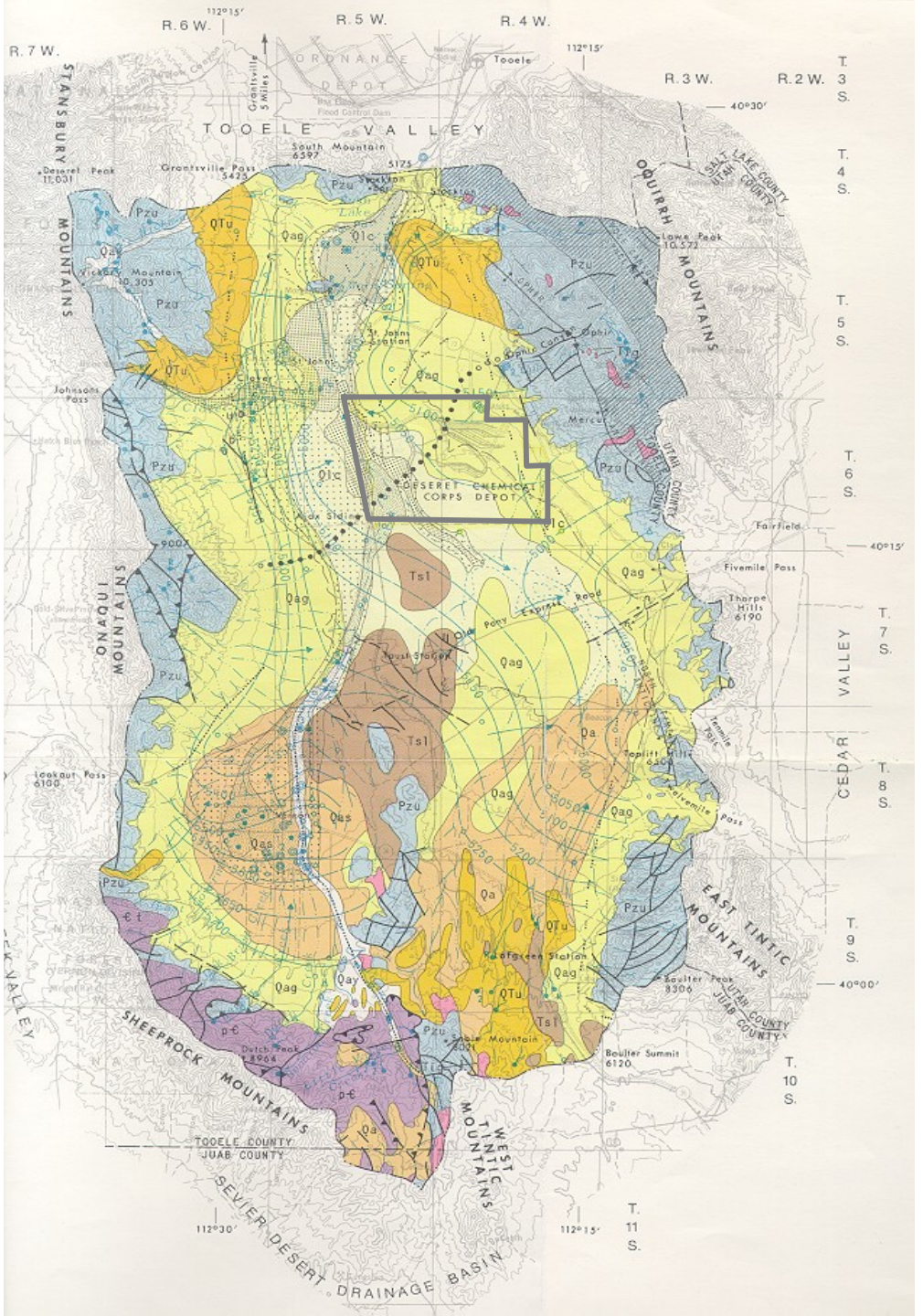
- Overview of Hydrogeology of DCD
  - David Shank
- Summary of 2005 Sampling Event
  - Jen Grippa

Hydrogeology Topics

- Rush Valley Geology and Groundwater Flow Patterns
- Lithology (Soil Types) at DCD
- Groundwater Surface and Elevations
- Hydraulic Conductivities
- Groundwater Velocities
- Natural Groundwater Quality

Geologic Map

- Rush Valley



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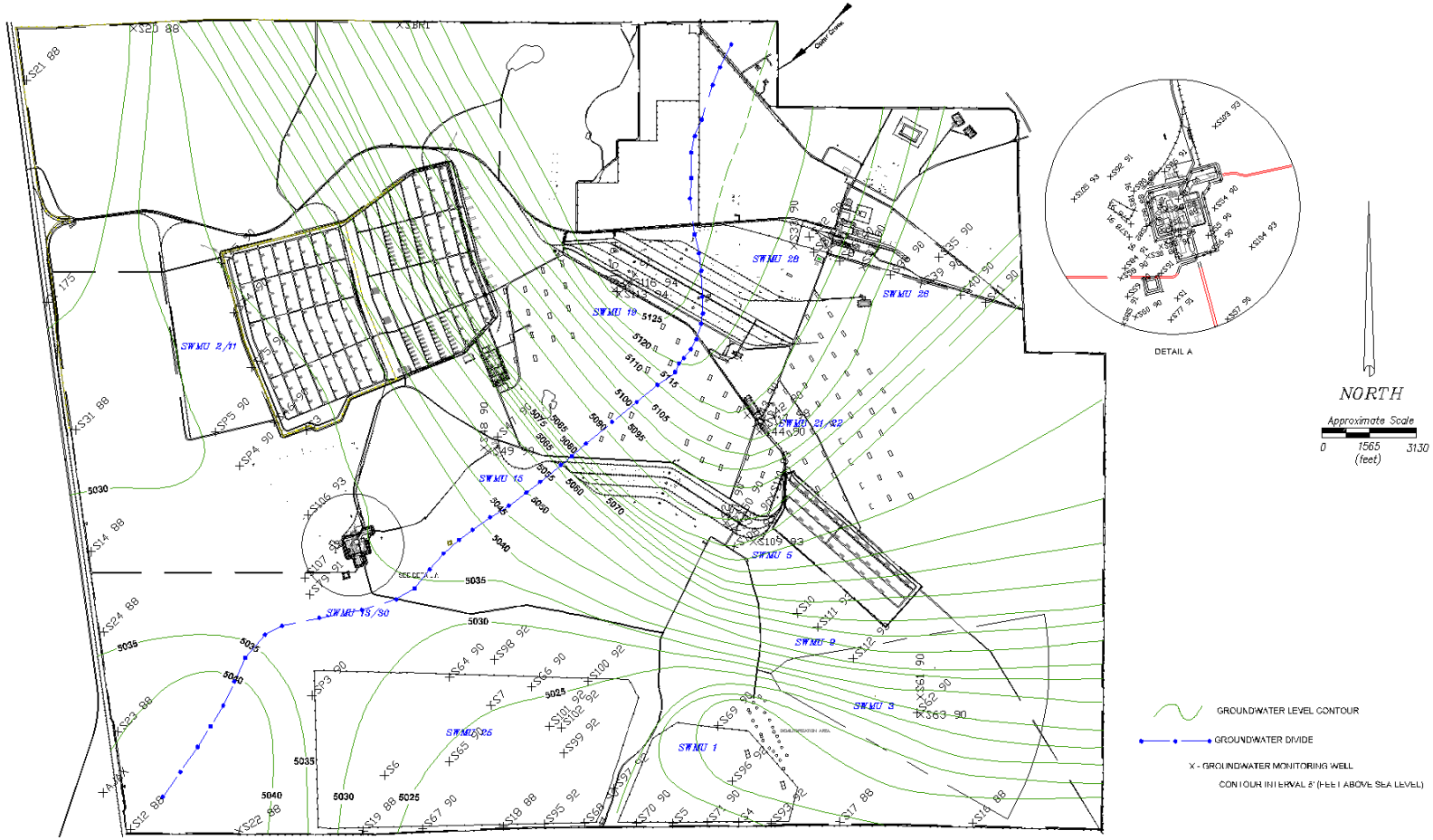
Site-Wide Groundwater Elevation Contours



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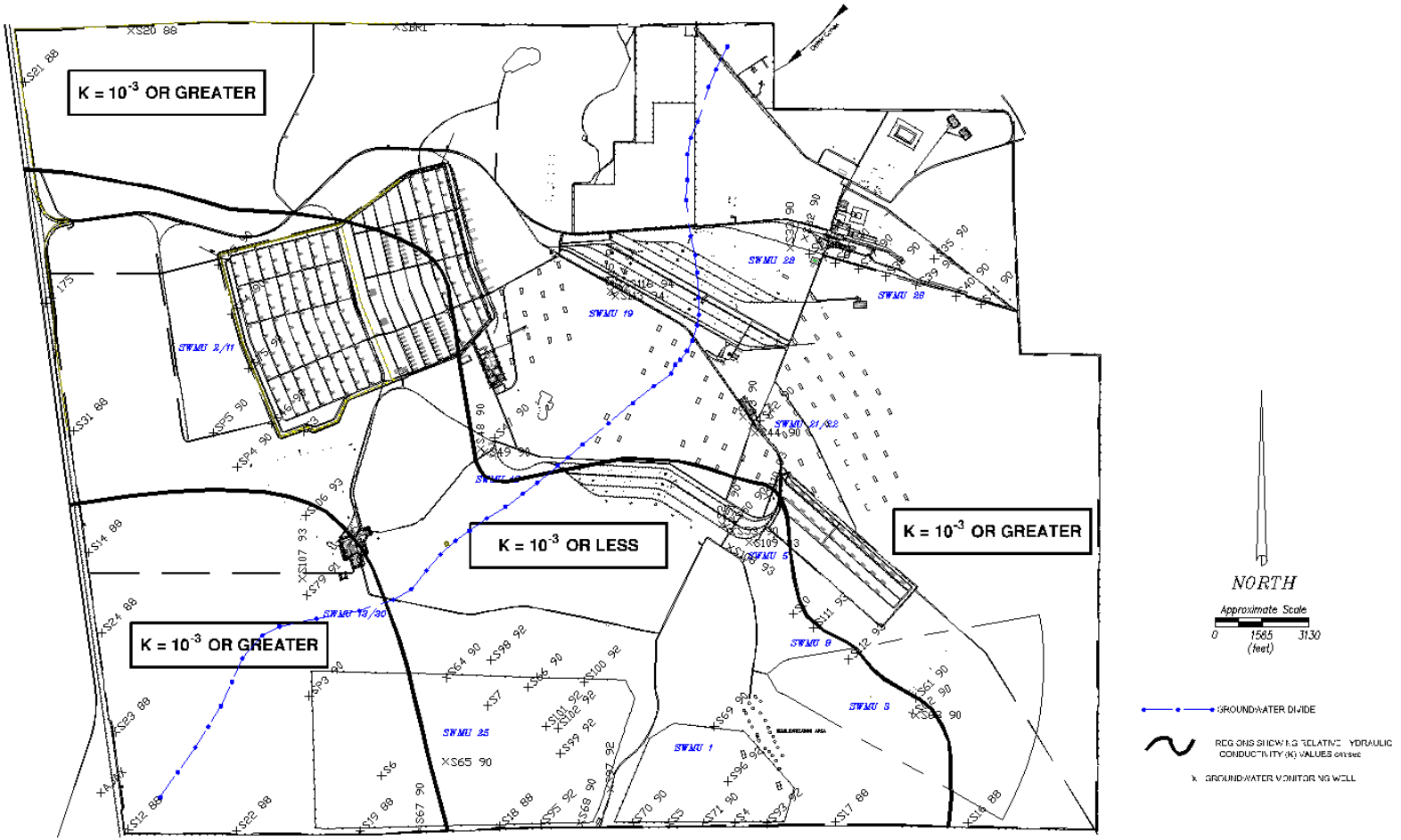
Areal Distribution of Hydraulic Conductivities



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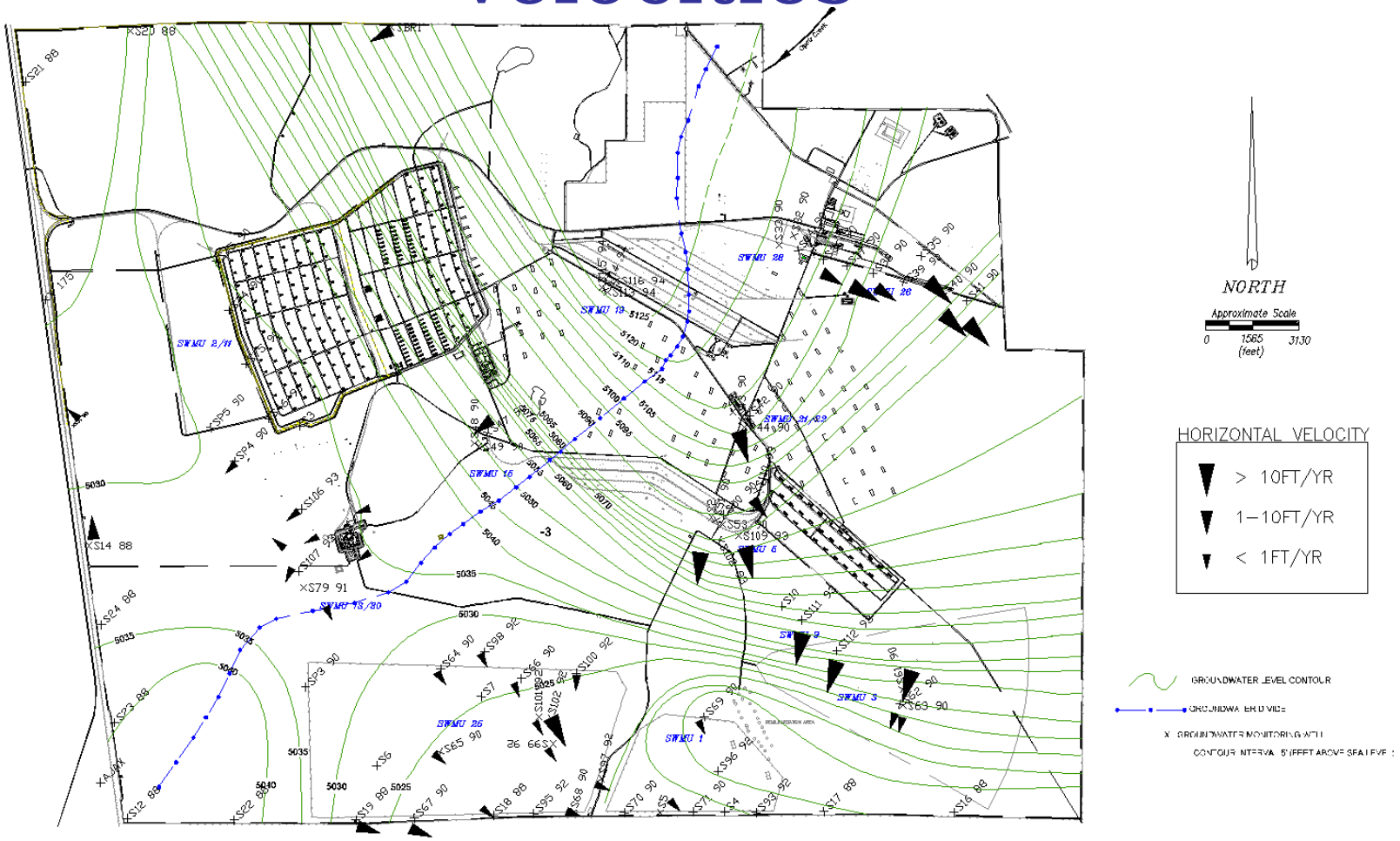
Estimated Groundwater Velocities



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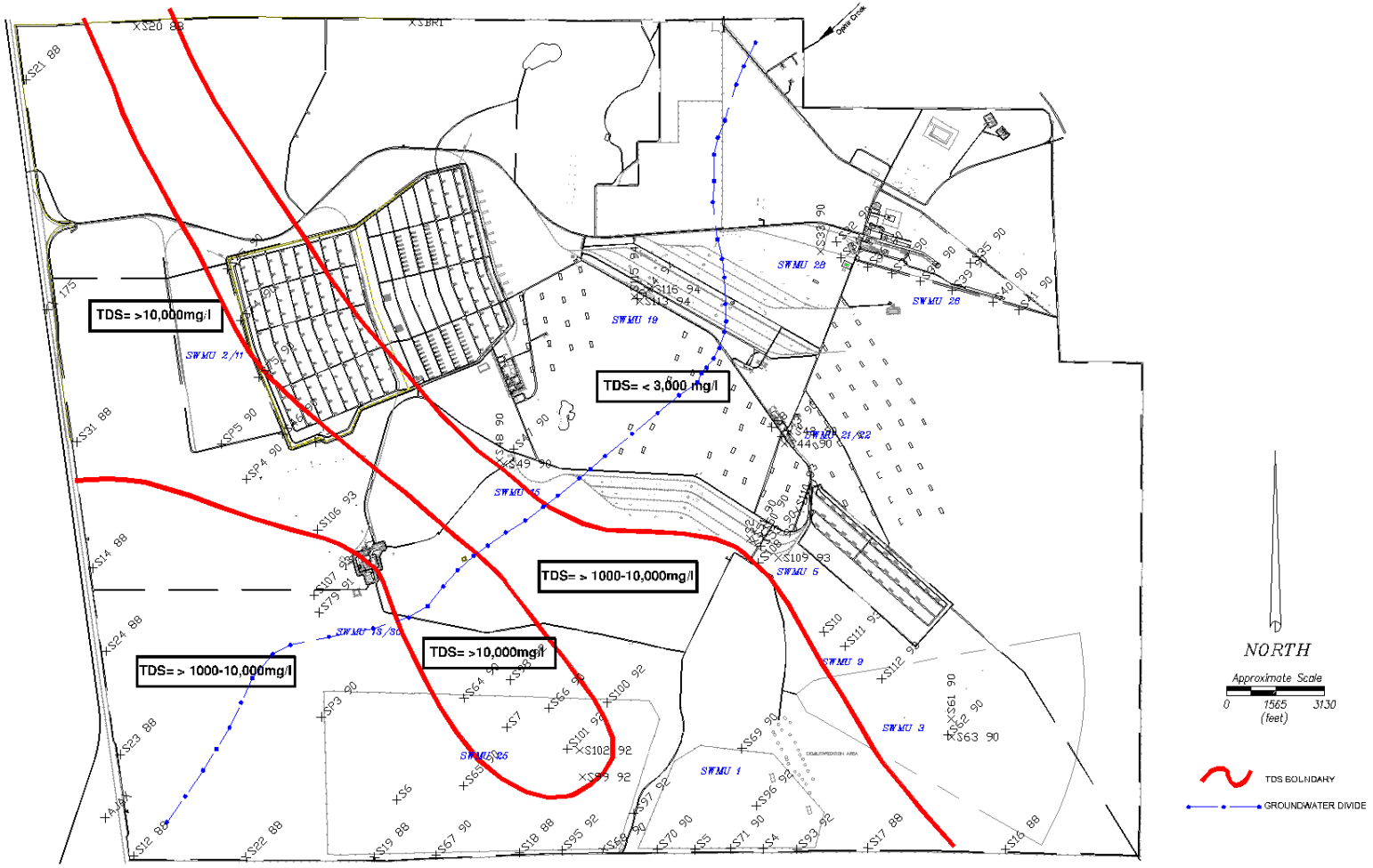
Areal Distribution of Total Dissolved Solids



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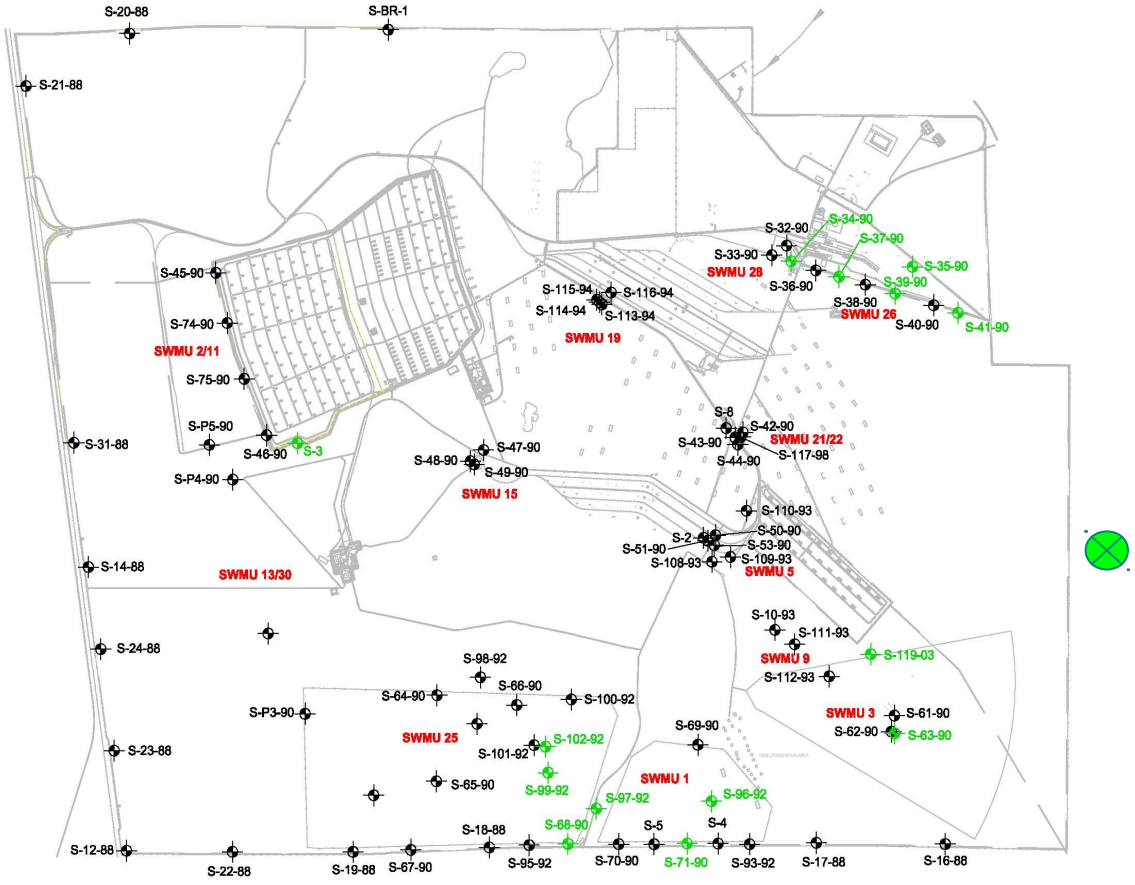
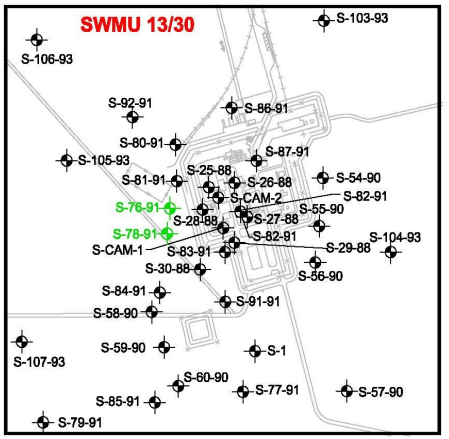
2005 Groundwater Topics

Scope of Program

- Measure groundwater elevation in 113 wells
- Sample 16 wells in 9 SWMUs
- Monitoring report (Preliminary results)

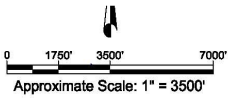
Groundwater Wells and SWMUs





Detail A

Wells sampled during 2005 event



Monitoring Well Monitored for Depth-to-Water

Monitoring Well Monitored for Depth-to-Water, Depth-to-Botton, and Sampled

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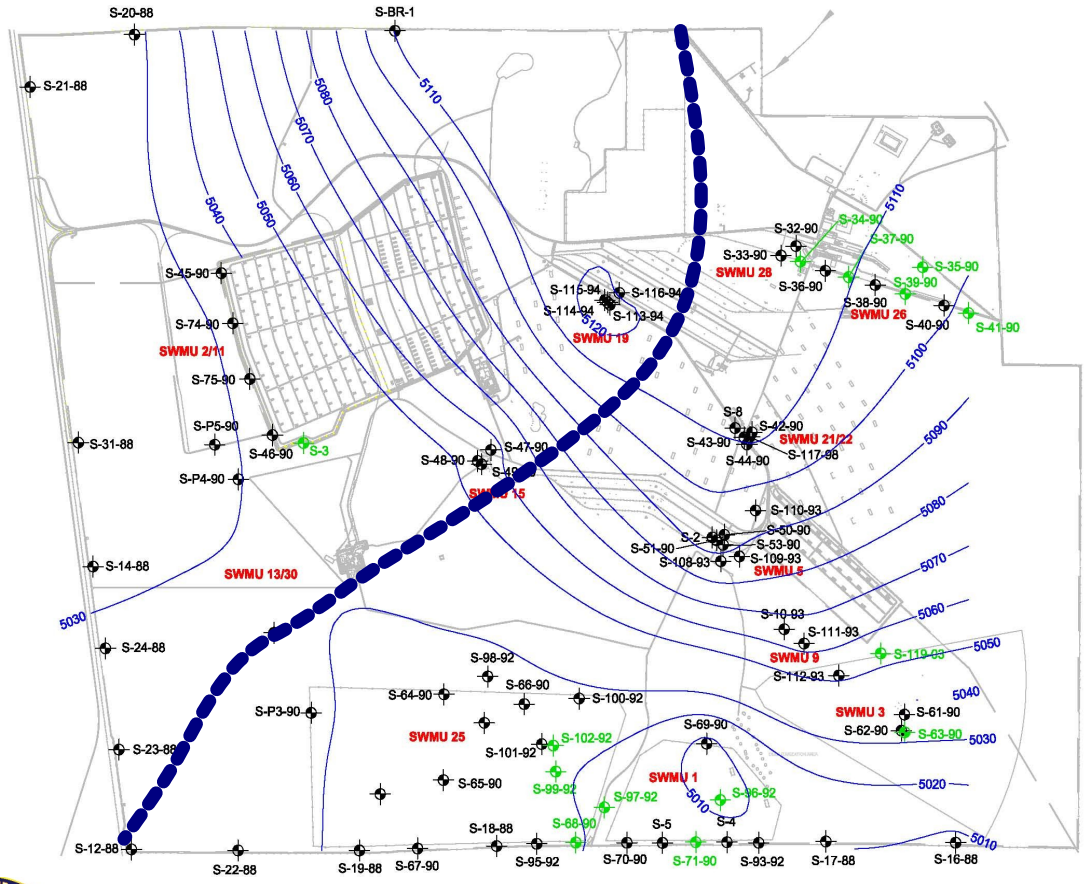
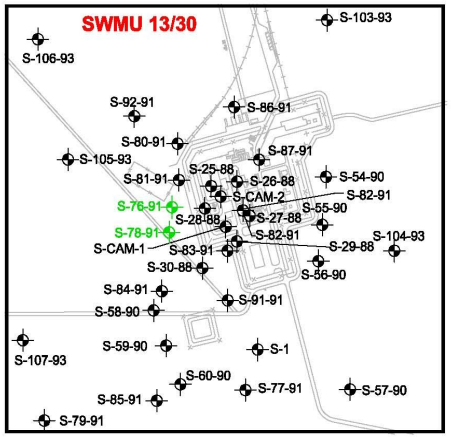
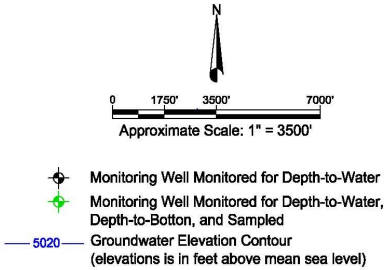
Groundwater Elevation Contours





Detail A



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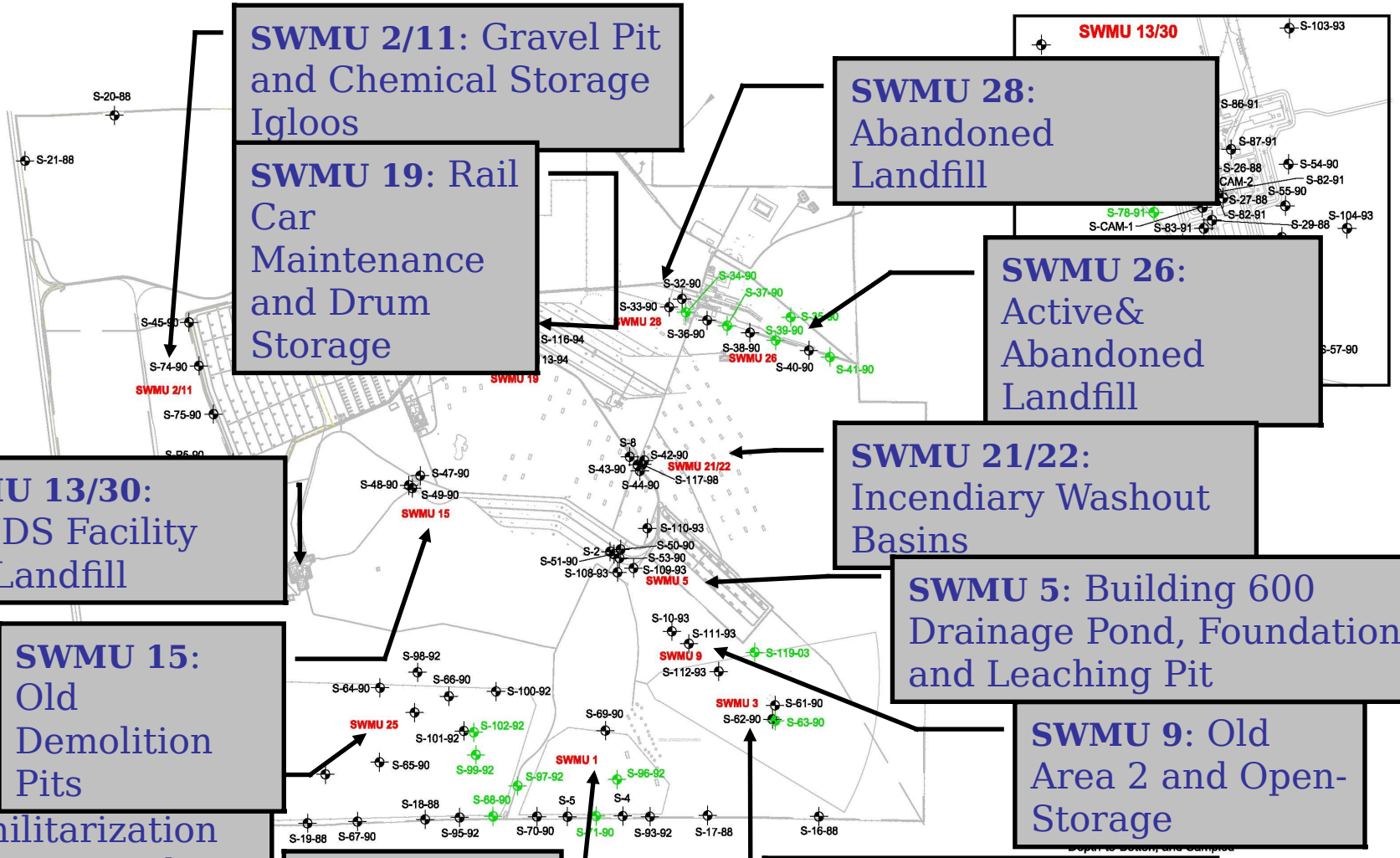
Historical Use of SWMU Areas



SWMU 2/11: Gravel Pit and Chemical Storage Igloos

SWMU 19: Rail Car Maintenance and Drum Storage

SWMU 28: Abandoned Landfill

SWMU 26: Active& Abandoned Landfill

SWMU 21/22: Incendiary Washout Basins

SWMU 13/30: CAMDS Facility and Landfill

SWMU 5: Building 600 Drainage Pond, Foundation, and Leaching Pit

SWMU 15: Old Demolition Pits

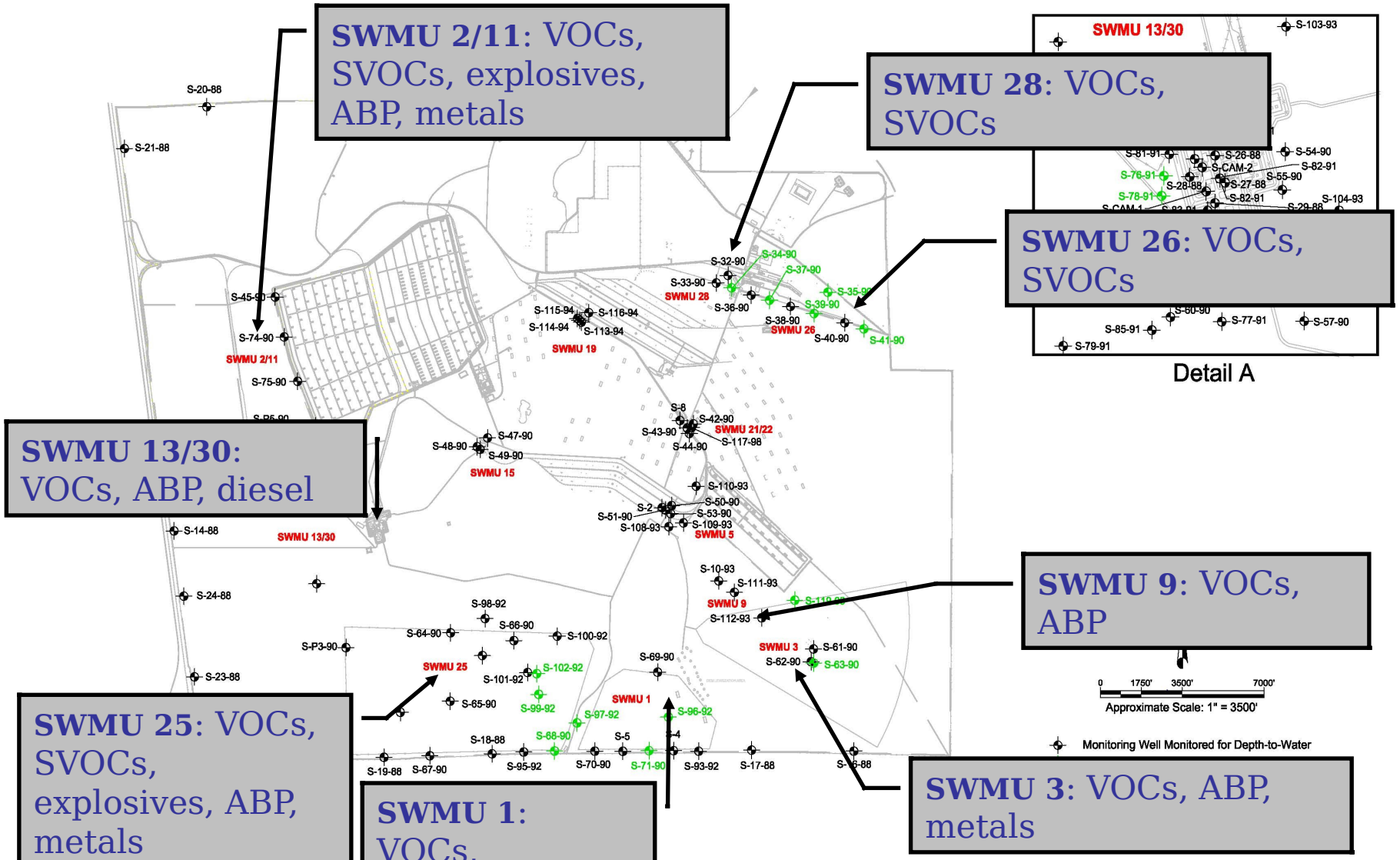
SWMU 9: Old Area 2 and Open-Storage

SWM Demilitarization Area Disposal Pits

SWMU 1: East Demilitarizat ion Area

SWMU 3: Trench Used for Decontamination Operations

2005 Analytical List



SWMU Preliminary Results

SWMU 2/11: **Acetone** low-level

SWMU 28: No Significant Detections

SWMU 26: **Bis(2-ethylhexyl)phthalate** low level **Chloroform** low level

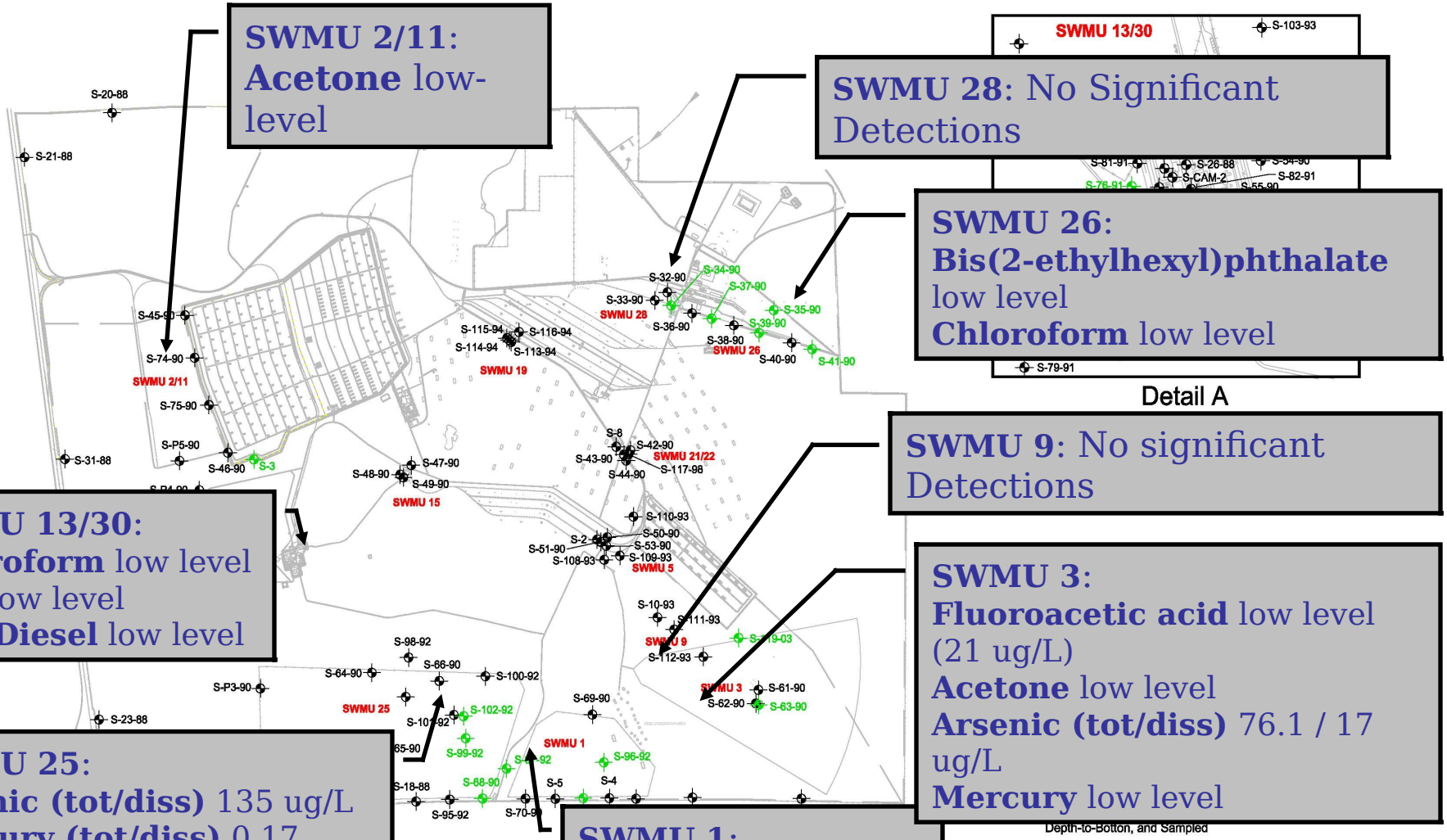
SWMU 9: No significant Detections

SWMU 13/30: **Chloroform** low level **TCE** low level **TPH Diesel** low level

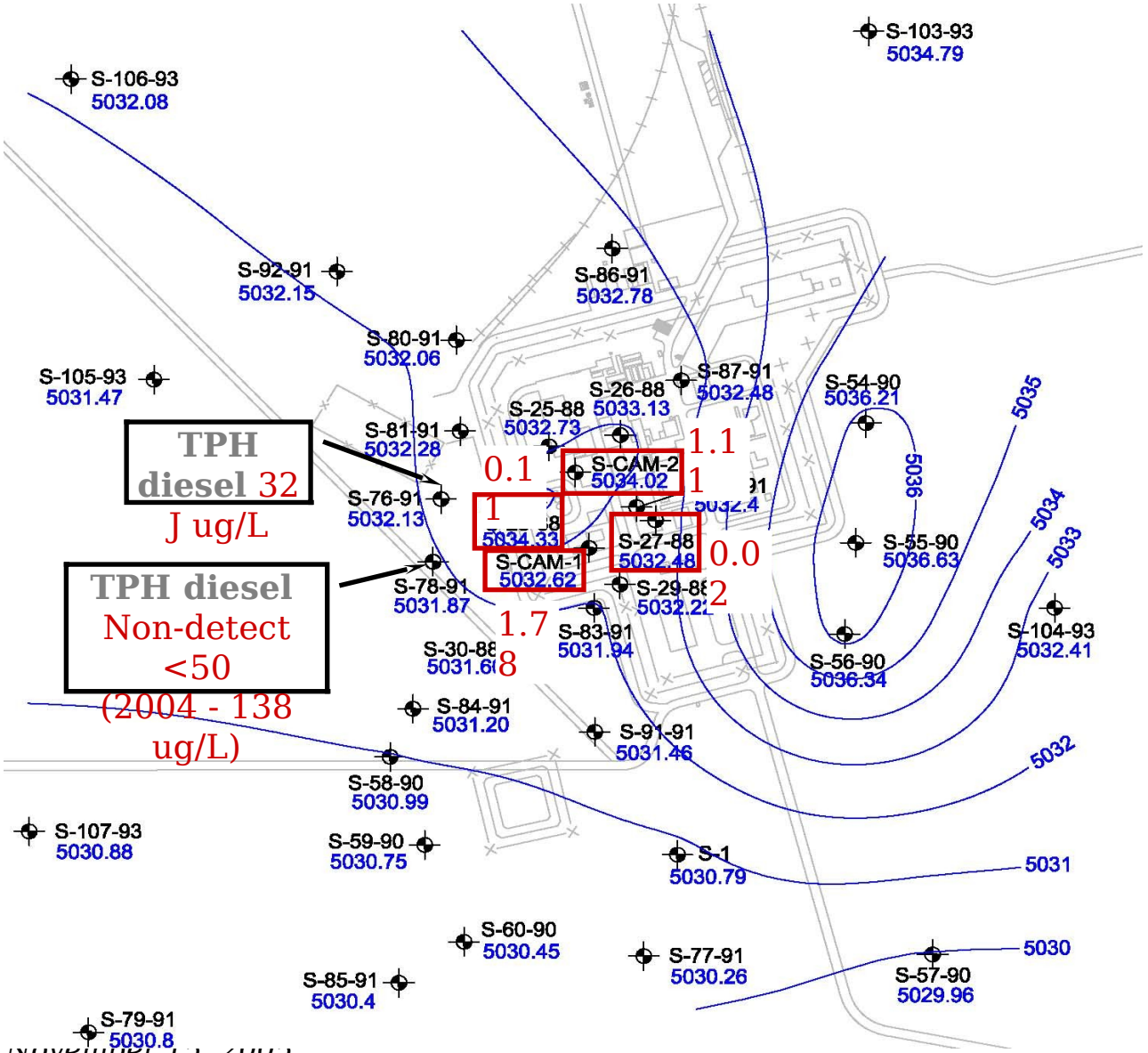
SWMU 3: **Fluoroacetic acid** low level (21 ug/L) **Acetone** low level **Arsenic (tot/diss)** 76.1 / 17 ug/L **Mercury** low level

SWMU 25: **Arsenic (tot/diss)** 135 ug/L **Mercury (tot/diss)** 0.17 ug/L **Molybdenum (tot/diss)** 277 ug/L **Carbon Tetrachloride** 230

SWMU 1: **Acetone** low level **Arsenic (tot/diss)** 188 ug/L **Mercury** low level



SWMU 13/30 LNAPL Thickness



2005 Sampling Event

Summary of Results (Preliminary)

- Data validation not yet performed
- No significant changes in groundwater elevations or flow direction from 2004 event
- Chemicals (many low level) detected in SWMUs 1, 2/11, 3, 13/30, 25, and 26
- LNAPL detected in four wells from CAMDS Area

Questions?